Date: Sun, 31 Jul 94 04:30:24 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #216
To: Ham-Homebrew

Ham-Homebrew Digest Sun, 31 Jul 94 Volume 94 : Issue 216

Today's Topics:

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

Date: Fri, 29 Jul 94 19:28:00 -0400
From: news.sprintlink.net!coyote.channel1.com!channel1!alan.wilensky@uunet.uu.net
Subject: Cb --> 10m anyone he
To: ham-homebrew@ucsd.edu

DB>By the way, do you have an amateur radio license? Your name doesn't
DB>seem to be listed in the callbook.

And your passport...drivers license, birth certificate, ss card, dog
license, cat license, organ donors card...youre not listed in the call
book, youre not listed in the callbook,this is a recording of the
private ham license police state.

Alan Wilensky, N1SSO
General Manager

Interactive Workplace Division
Vicom, LTD.
Phone: Edmonton Office
11603 165 St.
abm@world.std.com

Date: Sat, 30 Jul 1994 01:18:13 GMT
From: news.Hawaii.Edu!kahuna!jeffrey@ames.arpa
Subject: Cb --> 10m anyone he
To: ham-homebrew@ucsd.edu

In article <40.1558.2425@channel1.com> alan.wilensky@channel1.com (Alan Wilensky) writes:
>
>DB>By the way, do you have an amateur radio license? Your name doesn't
>DB>seem to be listed in the callbook.

>And your passport...drivers license, birth certificate, ss card, dog
>license, cat license, organ donors card...youre not listed in the call
>book, youre not listed in the callbook,this is a recording of the
>private ham license police state.

Alan, this, together with your code complaints on .policy, is nauseating.
The previous poster had good reason to say what he said. The FCC
dictates that the amateur radio service be self-policing, meaning
we look after ourselves and each other; it's our responsibility to
help keep unlicensed operators off the ham bands.

This thread revolves around converting a CB radio to 10M or there abouts;
CB'ers are moving from 11M to 10.5M and illegally operating. That the
original poster is not listed in the callbook makes some of us
suspicious of his intentions.

Note that Dave asked about his license in a nice way.

Jeff NH6IL
jeffrey@math.hawaii.edu

Date: Fri, 29 Jul 94 20:19:54 -0500
From: news.delphi.com!usenet@uunet.uu.net
Subject: Crystal Regenerative Receiver?
To: ham-homebrew@ucsd.edu

Does anyone know a circuit for a crystal controlled receiver which has a crystal whose frequency is the one you are receiving, not plus IF?
I think some cheap toy walkytalkys might have such a circuit and it should only need 2 or 3 transistors.

Date: Fri, 29 Jul 1994 19:19:17 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!uhog.mit.edu!nntp.club.cc.cmu.edu!casaba.srv.cs.cmu.edu!dolphin!ed@network.ucsd.edu
Subject: IR tv remote via computer serial port?
To: ham-homebrew@ucsd.edu

Has anybody seen software to record & playback / synthesize TV/VCR
IR remote signals using the parallel or serial port on an msdos computer?

Photo diode, > serial port dsr line (or something)
CTS line (or something) > IR LED.

I already have a universal remote hardwired through analog mux to the parallel port, problem is, about 1 yr of battery life. Batterys go dead, the remote dumps all the programs.(This is in use by a paralysed friend who cant easily reprogram the remote again.)

I would like to be able to store data to a disk and then "PlayBack" IR commands either from disk or ram memory.

Any info would be useful.

Thanks.

73

Ed N3SDO
** Email replys to Ed@fore.com **

Date: 30 Jul 1994 16:07:02 -0400
From: newstf01.cr1.aol.com!search01.news.aol.com!not-for-mail@uunet.uu.net
Subject: Mica HV Capacitors
To: ham-homebrew@ucsd.edu

In article <2u9n91$b62@omnifest.uwm.edu>, raym@omnifest.uwm.edu (Ray Muschlewski) writes:

Thanks for the offer Ray. I am building a 4-1000A Amp with 4200 volts on

the plate. I can use any size from .01Mfd up. Also for the screen,
anything over 750 volts would be OK. I will pay all shipping of course.
Let me know what you have. via E-mail.

Russ Ellsworth WA6CWV, Boise Idaho.

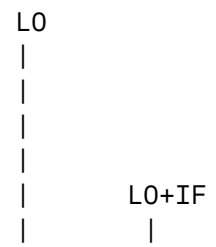
Date: Fri, 29 Jul 1994 23:57:10 GMT
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!howland.reston.ans.net!
agate!boulder!csn!col.hp.com!srgenprp!donc@network.ucsd.edu
Subject: Mixer Noise figure Question
To: ham-homebrew@ucsd.edu

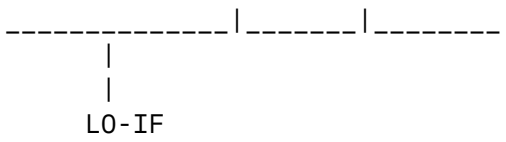
jdow on BIX wrote:

> Don, all I suspect limiting would do to either generator is reduce the noise
> content on the skirts by maybe 3dB unless there is a strange AGC network that
> is many MHz wide at work introducing noise. Some generators DO have leveling
> circuitry that is not filtered that could cause this. I'd be hard pressed to
> believe this in an HP generator of recent vintage. A narrow band filter is
> a better solution. It'll knock the noise sidebands on the test oscillator down
> to reasonable proportions. (This exercise DOES point out how important GOOD
> oscillator design is in mixers.)
> <^_^> Joanne Dow, Amiga Exchange Editor
>   jdow@bix.com

Alan's point about excess noise from the LO source at the IF frequency
(70 MHz) getting into the unbalanced mixer is very important; in my initial
response I forgot about this.

Suppose that this excess noise at F(if) has been filtered off. You still
might have a problem with noise offset from the LO by +-21.4 MHz, as was
mentioned earlier. I will explain why I think it is the AM noise, not the
phase noise, which causes the increased mixer noise figure. If the LO
has been limited so that no AM is present, then you have a pure FM spectrum
as shown here ...





Here, the upper and lower sidebands represent noise, but since no AM noise is present the upper and lower sidebands are anti-correlated (shown by the lower sideband going down). Thus, the upper sideband will mix down to the IF, but the lower sideband also mixes down and cancellation occurs.

Comments?

That being said, I still think the best solution is the balanced mixer. Putting a tuned filter on the LO would be tough since it would need to be rather narrow-band, and limiting the LO would be more work than just getting a nice double balanced mixer.

Don Cook

Date: Fri, 29 Jul 1994 20:21:57 GMT
From: hplextra!news.dtc.hp.com!srgenprp!alanb@hplabs.hpl.hp.com
Subject: Mixer Noise figure Question
To: ham-homebrew@ucsd.edu

DAVID BENGTSON X2711 P7798 (ep588deb@pts.mot.com) wrote:
: I've got a Mixer question. I'm working on a single bipolar transistor mixer,
: downconverting from 900 MHz to 21.4 MHz. High side injection. I've got a
: 2-pole ceramic block filter on the input, so the image noise contribution is
: taken care of. Now, the question. I have noticed that the indicated noise figure
: (Using a HP 8970 Noise fig Meter) vary's by about 4 to 5 dB depending on the
: generator that I am using for the LO injection. the HP 8657 is the worst,
: followed by an 8644 at about 2 dB better, with an old cavity tuned 8640 the
: best, at 4 to 5 dB better than the 8657. My initial take on this is that
: this is due to the variation in Phase noise between the generators, but I'm not
positive. MDS Simulations correllate with the results from the 8640, and I tend to
: think that those are the correct numbers (Besides, they are the best!) Is this
: due to the phase noise performance of the generators, or is there something
: else happening here?

: David Bengtson 407-364-3806
: Motorola No, I'm not speaking for Motorola
: Mail Stop 98 If I was, I'd be making more money!
: 1500 NW 22nd Ave
: Boynton Beach, FL 33626

With an unbalanced mixer, any broadband noise out of the signal generator
(whether phase noise or AM noise) will go right into the IF amplifier,
causing an increase in measured noise figure. Since the 8644 has better
phase noise than the 8657, it stands to reason that it would work better.
I believe that the 8640 has even better phase noise far from the carrier
frequency, due to the 8640's cavity-tuned oscillator (which has a much
higher resonator Q than the VCO's used in the synthesized signal
generators.)

The solution is either to use a balanced mixer or a local oscillator
with a tuned output.

Alan Bloom N1AL

Date: 29 Jul 1994 20:41:40 GMT
From: hplextra!news.dtc.hp.com!hpscit.sc.hp.com!rkarlqu@hplabs.hpl.hp.com
Subject: Mixer Noise figure Question
To: ham-homebrew@ucsd.edu

In article <CtpxwM.8vJ@srgenprp.sr.hp.com>,
Alan Bloom <alanb@hpnmarb.sr.hp.com> wrote:
>
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>(whether phase noise or AM noise) will go right into the IF amplifier,
>causing an increase in measured noise figure. Since the 8644 has better
>phase noise than the 8657, it stands to reason that it would work better.
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>frequency, due to the 8640's cavity-tuned oscillator (which has a much
>higher resonator Q than the VCO's used in the synthesized signal
>generators.)
>
>The solution is either to use a balanced mixer or a local oscillator
>with a tuned output.
>
>Alan Bloom N1AL

And the old HP 608 signal generator has better far out noise than
any currently manufactured signal generator. This is because it
has a tuned amplifier following the oscillator. The amplifier
tuning tracks with the oscillator tuning.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

Date: 29 Jul 1994 20:57:36 -0400
From: ihnp4.ucsd.edu!news.acns.nwu.edu!math.ohio-state.edu!howland.reston.ans.net!
gatech!gt-news!prism!prism!not-for-mail@network.ucsd.edu
Subject: Model rocket telemetry..
To: ham-homebrew@ucsd.edu

Howdy. I need some sort of circuit that can open a switch for about half a
sec. or so and then close it and then repeat it after about ten seconds.
Could someone give me an easy diagram for this? Thanks.

P.S. Does anyone know what a varactor diode is and where I can get one?

--
Joel V. Odom   KB5GWK   +   pi=~3.14159265358979323846264338327950
24879 Georgia Tech   +++++   28841971693993751058209749445923
Atlanta, GA 30332   +   physics   07816406286208998628034825342117
gt4879a@prism.gatech.edu   +   major   06798214808651328230664 7....

Date: Sat, 30 Jul 1994 13:59:50 GMT
From: ihnp4.ucsd.edu!agate!library.ucla.edu!csulb.edu!csus.edu!netcom.com!
kludge@network.ucsd.edu
Subject: RFI from Heath "Big Ben" Chime Clock
To: ham-homebrew@ucsd.edu

In article <btobackCtpsCB.DI1@netcom.com> btoback@netcom.com (Bruce Toback)
writes:
>
>Has anyone else had this problem? And what did you do about it? And
>how the heck can I get a 30 MHz FM signal from that clock?!

Welcome to the 1990s! It seems that everything today has a pile of
digital electronics in it, and digital electronics radiate. (Remember
that a perfect square wave has an infinite number of harmonics, and you
are seeing some of them at 30 MHz).

First of all, if the clock has a vacuum fluorescent display, you are
probably in real trouble. I have had no luck reducing RFI from these
things, other than by recycling them.

The first step is to add capacitance to the power supply line as close
to the source as possible (and a .1 MFD ceramic is a good start). Most
of the worst of the RF is radiated through the power lines, so if you
cut off the noise at the chip, you're doing well. After this, you can
start adding capacitance to the LED driver outputs, just on each pin of
the matrix to ground. Again a .1 MFD ceramic from the junk box is a

good start. Also look for bad grounds, corroded ground wires, and the like.

This fixes the majority of problems with small digital gadgets. Some of them take some more work, but this usually does it, and since the next step is shielding the case, you might not want to get that far anyway. I deal with this stuff all the time... at home my solution has been just to banish it from the house.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

Date: Fri, 29 Jul 1994 17:57:52 GMT
From: ihnp4.ucsd.edu!munnari.oz.au!hpg30a.csc.cuhk.hk!news.hk.net!howland.reston.ans.net!vixen.cso.uiuc.edu!sdd.hp.com!hp-pcd!hpcvsnz!charlier@network.ucsd.edu
Subject: What is this HP Thinkjet IC ?
To: ham-homebrew@ucsd.edu

Charlos Potma (charlos@rivm.nl) wrote:

: hello all,

: I have built the loop antenna described in QST of May 94,
: (works fine btw, tunes from 14-24 Mhz)
: and want to add a stepper motor drive to tune the antenna.
: I have found an old HP Thinkjet printer that has just the
: stepper motor I need: it has a step size of 7.5 degrees
: and combined with a small 1:6 gearbox I have it should do
: allright.
: The stepper motor (used in the printer for paper-feed)
: is apparently controlled by an IC marked: 1858-0097-8610 .
: My question is: what is this IC ?. Is it a HP part number ?.
: Can anyone tell me what it is and what I can use to replace
: it with ?

 The 1858-0097 is not a proprietary part, as far as I can tell.
It's actually a Sprague ULN-2023A, 7-Darlington transistor array.
I don't have a Sprague IC catalog handy, or I'd tell you more,
but perhaps you can find the pin-out of the Sprague part.

--
Charlie Panek KX7L
charlier@lsid.hp.com
Hewlett Packard Company
Lake Stevens Instrument Division
Everett, Washington

Date: Fri, 29 Jul 1994 20:11:32 GMT
From: hplextra!news.dtc.hp.com!srgenprp!alanb@hplabs.hpl.hp.com
Subject: What is this HP Thinkjet IC ?
To: ham-homebrew@ucsd.edu

Charlos Potma (charlos@rivm.nl) wrote:

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: is apparently controlled by an IC marked: 1858-0097-8610 .
: My question is: what is this IC ?. Is it a HP part number ?.
: Can anyone tell me what it is and what I can use to replace
: it with ?

The 1858-0097 is a Sprague ULN-2023A, which is an array of 7 darlington
transistors. I notice that Mouser Electronics (800-346-6873) sells
a number of other ULN-xxxx darlington arrays. You might call and ask
them if they can get the -2023, or maybe one of the others is a
pin-compatible replacement.

AL N1AL

Date: 31 Jul 1994 01:05:05 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!usc!nic-nac.CSU.net!
news.Cerritos.edu!news.Arizona.EDU!usenet@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <CtIorM.L0z@ncifcrf.gov>, <YEE.94Jul25185334@mipgsun.mipg.upenn.edu>,
<CtJx2K.BJM@nntpa.cb.att.com>
Reply-To : jmiller@peds.eyes.arizona.edu (Joe Miller)
Subject : Re: Does anyone have info on QEX?

Once upon a time, there was a great "technical" ham radio mag called "Ham Radio".
It was apparently too technical for the market, but had a great run and I still
access back issues.

It is hard to find anything in QST worth clipping. The "optimized direct
conversion reciever" is the only
thing that I can point to in the past couple of years that has been filed.

As a member of ARRL paying for my subscription to QST, I would GREATLY prefer to
see "Moved and Seconded"
dropped and the pages used for substantive technical articles.

I am particularly annoyed by "Construction Projects" that include sole-source

EPROMS, with no
sites noted in the article for downloading the software.

I am looking forward to my first issue of QEX. This thread has encouraged me to subscribe.

End of Ham-Homebrew Digest V94 #216
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